

MAGNET MARVELS

Modern Giants That Raise Tons of Metal at a Time.

LIFT BILLETS HOT OR COLD.

A Single One of These Monsters With Invisible Magic Fingers Will Do the Work of Half a Hundred Men—The Magnet in Medicine and in Surgery.

Those who have watched a toy magnet lift up pins and needles and marvel not a little at the unseen power that causes the bits of metal to jump might well be excused for standing agape at the sight of a modern giant magnet picking up several tons of iron and steel from the scrap heap and conveying it with ease and rapidity to the melting furnace beyond.

So great has been the commercial development of the magnet that it can lift five and a half tons. These giant magnets used in iron and steel mills can pick up hot as well as cold billets, and a single one of this character will displace half a hundred workmen.

A further improvement may be noted in the combination of skull cracker and magnet. The skull cracker is a huge pear shaped ball of iron suspended by a chain to a hook and steel ropes. This skull cracker is dropped with great force on scrap metal to be broken up for remelting. It breaks the metal into conveniently small pieces and is lifted up and down by the magnet until the scrap is reduced to proper size. Then the invisible fingers of the magnet gather up the small pieces and carry them to the melting furnace. The entire operation is accomplished in one-hundredth of the time formerly required by manual labor.

More recently magnets have been employed in the milling industry to pick out small particles of metal that frequently get into flour and cause explosions through friction when they come in contact with the big rollers. Not a particle of metal can escape the powerful magnets suspended over the chute through which the grain passes. In mining and metallurgical work the magnet has become an indispensable labor saving agent. The magnetic separation of ores has saved thousands of dollars to mining companies. When the rocks are crushed and pulverized powerful magnets gather up the infinitesimal parts of metal released from their beds and convey them to the smelting furnace. Quantities of ore can thus be saved from old tailings that were formerly considered pure waste.

Recently commercial magnets were employed for the novel purpose of raising sunken treasures. A big cargo of nails was lost in twenty fathoms of water, and the loss seemed irreparable until some enterprising genius raised them easily and cheaply by means of a magnet suspended from a derrick by steel cables.

In the most improved commercial magnets hollow steel castings are used, in which magnetized coils are placed. The latter are built up of alternate layers of copper and asbestos and insulated from the cast steel frames by thick sheets of mica. A magnet of this construction is proof against heat and cold and free from the danger of short circuiting. There is nothing combustible used in its manufacture, and it can gather up a ton of hot scraps of steel with comparative ease.

But the invisible fingers of the magnet can pick up the most delicate splinter of steel no larger than a sewing needle as easily as it lifts a huge iron or steel beam weighing a ton or two. The small magnets have therefore found as great a field of usefulness as the big ones. In all trades they are employed for handling pieces of metal too small for fingers to pick up easily.

In a medical way they are used successfully for extracting iron or steel splinters from the eye and also for drawing out of the body needles and pieces of metal that have found lodgment there. A dressmaker who had inadvertently swallowed a dozen needles was operated upon in this way with entire success. For several days she was placed under a powerful magnet until every needle had been drawn from her body.

In a therapeutic way magnets have proved of value in destroying ulcerous and cancerous growths, and even blood diseases of some kinds have yielded to their curative effects. A man with the point of a dagger broken off in his body had it removed by a magnet. Another patient had been suffering from a painful ulcer on the chin for many years without finding relief. He was finally cured by treatment with a magnet, which drew from his chin a lot of steel filings that had caused all the trouble. The filings had found lodgment in a cut in his face one day when working before a turning lathe. No immediate trouble had followed, and the man had forgotten the incident until the magnet drew them out and gave the ulcer a chance to heal.—George E. Walsh in Chicago Record-Herald.

A Pertinent Question.
There are great men who cannot spell, and small people who object to them. "Spell 'cat,'" said the teacher to the boy at the tail end of the class. "K-a-t," replied the boy. "Silly," replied the teacher. "Can't you spell 'cat'?" "Well," replied the sensible boy, "what does k-a-t spell?"—London Chronicle.

Idleness is only the refuge of weak minds and the holiday of fools.—Chesford.

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Points for Mothers**The Home Play Hour.**

"Mother, what can I do this afternoon while you are in the kitchen fixing dinner?"

So many mothers are confronted by this question that the following suggestions may satisfactorily answer your child the next time she confronts you with such a demand. Try making vegetable furniture.

In preparing the vegetables give the child a thin slice of potato or carrot or any vegetable of that description and allow her to hold it up to the light. She will be amazed and delighted at the beauties it contains. Show how the apple sliced horizontally through the core displays the star, which she will at once connect with the blossom.

Wonderful sets of furniture may be constructed from slices of vegetables and match sticks. A piece of carrot with four match sticks makes a charming table, while two slices of carrot cut lengthwise may be converted into a comfortable sofa, the back fastened on with match sticks and four legs added. Innumerable other forms will suggest themselves to the child, and always encourage originality and inventiveness.

There are many possibilities in a handful of small grain, such as rice, hominy or barley, or best of all, lentils. If you have them. Spread these out on the table, and many objects may be made in mass, such as circles or apples, or any vegetable and fruit. These will then suggest different animal forms or trees. Another way of using lentils is to make the shape of the desired object by putting one grain next to another and then filling in the outline with the rest of the seeds.

Another game growing out of this one may be played with a piece of string, not too heavy. First allow the child to experiment with it and then suggest laying a circle. One dent in the outline will make an apple, another opposite will suggest a butterfly or a spool, three dents a three leaf clover and four dents a flower.

This will suggest straightening out the curves into points to form a star or into lines to make a square, or a small circle with a string is a toy balloon or is modified into a kite. Besides these the outlines of vegetables or fruits or kitchen utensils are made, not to mention scrolls and other conventional forms.

Until now no mention has been made of the delights of baking day. Oh, the joy of a piece of dough and the tin lid of a baking powder can! What delectable pies and cakes are made, what sumptuous feasts are served to dolly!

Swimming Without Water.

The school children of Germany are taught to swim without the use of water. It is claimed that the proper stroke and motions of the arms and legs are more readily acquired in this manner than in the water, as is the more general way of teaching swimmers. The student is suspended by a wide belt from an overhead rail, while the feet are attached to a pair of ropes running over pulleys and adjustable to various requirements. The pupils thus suspended are then taught how to perform the movements of the breast stroke until the action becomes almost instinctive. The advantage in teaching these movements in such a way is that the pupil is not distracted by the fear of a ducking.

Chewing Gum For Children.

After all the sarcastic comments on the chewing gum habit it is interesting to note in a recent issue of American Medicine a good word in its favor. Dr. La Grand Kerr writes that one of the most trying problems in infectious diseases of children is to keep the mouth clean and that many of the secondary infections which occur as a result of infectious diseases in childhood occur because the mouth has not been kept clean. He adds that children rebel against the cleansing process while they are ill, and he advises the use of chewing gum as offering the easiest and best relief.

Training Children.

Obedience, order and cleanliness are the three most important points to instill into a child's mind. When baby is old enough to understand simple nursery rules he should be taught that rules are made to be kept at all times.

Mothers and nurses who are not skilled in the science of medicines and children's diseases should never give drugs to young children without the advice of a physician.

When the Baby Doesn't Gain.

If a child is delicate and there is a question of his not gaining in weight he should be weighed frequently.

When he does not gain in weight his food is not nourishing him properly, and a change should be made.

But if he is healthy and hearty and shows no signs of wasting there is no object in weighing him every week unless it is for the satisfaction of his fond and admiring parents.

A Mending Hint.

The best way to reduce mending is to guard against it. One reason why children's clothes rip is because the seams are sewed with cotton thread, which is brittle. Any dress which will be given hand wear should be made up entirely of silk. The sun and water rot cotton, but do not affect the silk.

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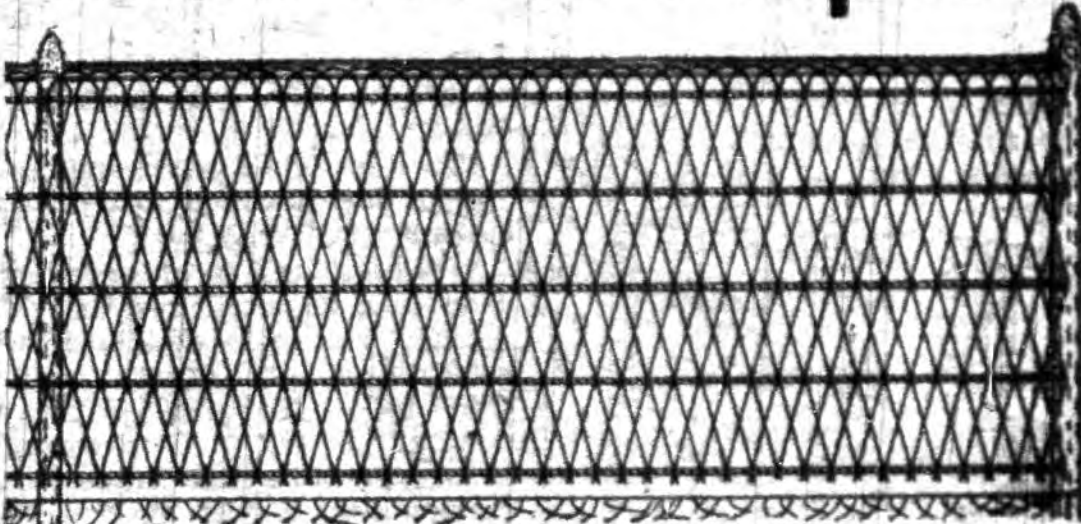
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